Roylan Developments

StoragePod ä System

END USER MANUAL

StoragePod™ Station V2	Cat. No. SPOD0001
StoragePod™ “Purley” Enclosure	Cat. No. SPOD0003
StoragePod™ “Dundee” Enclosure	Cat. No. SPOD0004
StoragePod™ “Ockley” Enclosure	Cat. No. SPOD0005
StoragePod™ “Palm Springs” Enclosure	Cat. No. SPOD0006
StoragePod™ “San Diego” Enclosure	Cat. No. SPOD0007
StoragePod™ “San Francisco” Enclosure	Cat. No. SPOD0010

Operators Manual

Contents

1) Introduction & Product Overview 3
2) Heath and Safety Notes 6
3) WARNING STATEMENTS 7
4) Caution Notes 7
5) Before Using Your StoragePod™ System 8
5.1) Main Packaging Case – StoragePod Station....8
5.2) StoragePod Enclosure Packaging 8
6) Operating Environment 9
7) Gas Supply Specification 10
8) Connecting the Inert Gas Supply 11
8.1) UK, Europe and Asia 11
9) Connecting the Power 12
10) Connecting the Flushing Lines 13
11) Operating Procedures - StoragePod™ Enclosures 14
11.1) Lid & Latch System 14
11.2) Releasing the Enclosure Lid/Door 15
11.3) Re-Fitting the Enclosure Lid 17
11.4) Quick Release Hose Fittings 19
11.5) Engaging the Quick Release Hose Fittings 20
11.6) Disengaging the Quick Release Hose Fittings 21
12) StoragePod Enclosure Designs 22
13) StoragePod™ Station.... 23
11.1) General 23
11.2) User Interface 24
11.3) StoragePod Station System States 25
11.4) System Start-Up 26
11.5) System Calibration 28
11.6) Flush Set-up and Threshold Setting 30
11.7) The Gas Flushing Procedure – System Operation.... 32
14) Specification Summary - StoragePod™ Station 35
15) System Maintenance – StoragePod™ Station 36
15.1) Safety 36
15.2) General Maintenance 36
15.3) Mains Lead, Gas Supply Hose and Flushing Lines 36
15.4) Fuses.... 37
15.5) Gas Sensor Maintenance and Replacement.... 38
16) System Maintenance – StoragePod™ Enclosures.... 39

1) Introduction & Product Overview

1.1) Compound Storage

A research operation's small molecule compound collection is often its most precious asset.

Compounds are the fundamental ingredients required for pharmaceuticals research assays. Pharmaceuticals research would grind to a halt without them.

Many compounds often require complicated and lengthy chemistry to be created, or are derived from natural products making them difficult and sometimes even impossible to replace.

Accordingly, maintaining compounds is of great importance within the research environment. Compound degradation will invalidate the screening process, resulting in wasted research effort and expense. More importantly, damaged compound collections may present the possibility that a potential lead compound could be missed during the screening process.

Compounds can be damaged in a variety of ways:

- Due to reactions caused by the presence of ultra violet light
- Due to reactions caused by the oxygen present in the free air we are currently breathing
- Due to moisture absorption of Dimethyl Sulfoxide (DMSO), a highly hydrophilic agent that is universally used to solubilise compounds into a liquid form. In particular this moisture absorption will lead to:
    - depression of the DMSO freezing temperature
    - ice crystal formation when freezing
    - crushing of compounds
    - compounds falling out of solution.
- Due to freeze-thaw cycles. Many research operations freeze their compounds in an effort to stop moisture absorption and possible chemical (oxygen) reactions. The presence of moisture (as described above), in combination with free thaw cycles can lead to the most significant damage.

1.2) The StoragePod ä System

The StoragePod™ System is a modular storage solution, designed to address the various mechanisms which result in compound degradation.

The StoragePod™ System consists of a StoragePod™ Station desktop instrument and as many StoragePod™ Enclosures as the End User requires for their storage application.

SBS format Labware (plates, racks of tubes, etc.) containing small molecule compounds may be placed into the StoragePod™ Enclosures, which can be closed with a hermetic (gas tight) seal.

An enclosure may then be connected to the StoragePod™ Station, which will flush the environment within the enclosure using inert gas (nitrogen or argon) to expel the oxygen and moisture that is present.

The gas flushing procedure is fully automatic and may be instigated at the touch of a button. The final conditioning of each flushed enclosure is achieved by flushing until a User defined residual oxygen content is achieved within the enclosure. The system default is a residual oxygen content of 2%
Once the flushing procedure has been completed the enclosure may be disconnected from the StoragePod Station and left for many months, with virtually no change in the inert gas storage environment.

As part of the flushing processes the StoragePod™ Enclosures are sealed with a positive pressure, meaning that should any leakage occur only inert gas will leak out – no moist air will leak in.

In summary the StoragePod™ System allows varied quantities of material to be cheaply and efficiently stored, free of moisture, oxygen and light – removing the leading causes of compound degradation.

The StoragePod™ System is ideal for the following applications:

- the primary storage system for a small research operation
- a satellite storage system for a large sized research operation
- a low cost, long term storage system
- a delivery system for compounds being shipped within or between research sites – no more boxes of dry ice!

2) Heath and Safety Notes

It is important to ensure that the StoragePod™ System is installed and operated in accordance with all applicable Health and Safety requirements.

It is the Users responsibility to ensure that all relevant Heath and Safety Regulations are identified and complied with. Failure to do so may result in damage to equipment, damage to property and personal injury.

In particular, the User should study the contents of this operator's manual carefully, before handling and/or operating this equipment in any way.

Under no circumstance will the manufacturer of this equipment be liable for any incidental, consequential or special damages of any kind whatsoever, including but not limited to personal injury, death, damage to buildings, loss of turnover and business and business interruption.

WARNING SYMBOLS

Used in Accordance with IEC 417

WARNING!
(Please Refer to Accompanying Documentation)

3) WARNING STATEMENTS

WARNING: Only operate your StoragePod™ Station within well air-conditioned spaces. The StoragePod™ System vents inert gas during the gas flushing procedure. Whilst the volume of vented gas is minimal, air conditioning is required to remove this vented gas and prevent a build up of the inert gas level within the surrounding free air

WARNING: Do not operate this instrument in an atmosphere containing explosive gasses

WARNING: Only the supplied, approved mains cord set should be used with this instrument

WARNING: If used, power extension leads MUST be earthed

WARNING: Do not position the StoragePod™ Station so that it is difficult to disconnect the mains plug or appliance coupler

WARNING: Protection of the End User may be impaired if the StoragePod™ system is used in a manner not specified by Roylan Developments Ltd.

4) Caution Notes

Roylan Developments Limited accepts no liability resulting from the misuse of this equipment.

5) Before Using Your StoragePod ä System

During the unpacking process, please carefully inspect your StoragePod™ Station and Enclosures for any damage that may have occurred during shipping. Do not use the StoragePod™ Station or any Enclosures that are identified as having been damaged in transit.

5.1) Main Packaging Case – StoragePod Station

Please carefully store your StoragePod™ Station packaging. In the event the unit needs to be shipped in the future, the packaging will be required to ship the unit in the correct manner.

Please check that all of the components provided in the packing list below are present:

- StoragePod™ Station
- Flushing Lines, 1 pair (a blue line and a red line)
- Instruction Manual
- Mains lead
- 1 meter length of 10mm supply tubing
- 2 meter length of 10mm supply tubing
- 10mm to ¼ inch supply tubing converter (for End Users based in the USA and Canada)

In the event that the StoragePod™ Station is identified as being damaged during shipping, or item(s) are missing from the packing list, please contact you local Roylan Developments Dealer or Roylan Developments in the UK for assistance. Please refer to our web site www.spod-technology.com for the most current set of contact details

Roylan Developments will NOT ACCEPT RESPONSIBILITY for any damage incurred during return shipping unless the StoragePod™ Station is returned in its original packaging.

5.2) StoragePod Enclosure Packaging

StoragePod™ Enclosures are supplied in a fully assembled state and so there is no packing list for these items.

In the event the StoragePod™ Enclosures are being used for shipping between sites, the supplied cardboard packaging cases may be used to protect each enclosure.

Replacement StoragePod™ packaging cases may be purchased separately.

6) Operating Environment

The StoragePod™ Station should be operated in the following environment:

Temperature: 15-40 Degrees Centigrade

Facility: A clean laboratory space with a footprint of at least 18 square meters or 200 square feet

Environmental: Air-conditioned with HVAC providing a minimum turnover of three volumes of room air per hour

Placement: On a laboratory bench capable of carrying 50Kg or 120lbs in weight and have sufficient space around it for at least one enclosure to be placed and connected via the 1 meter long flushing lines.

NOTE: longer flushing lines are available for applications weher StoragePod enclosures are placed greater than 1m away from the StoragePod Station. Please contact Roylan Developments for further details.

7) Gas Supply Specification

The inert gas supply to the StoragePod™ Station should supply either argon or more commonly nitrogen.

The inert gas supply should conform to the following specification:

Supply pressure (bar):	4.1
Supply pressure (PSI):	60
Supply flow rate (litres/minute):	60 or higher
Supply flow rate (cubic feet/minute):	2.1 or higher

Ideally the gas should be supplied from a gas cylinder or dewar (liquid nitrogen boil-off system) fitted with a suitable regulator. This will provide inert gas at a high flow rate and virtually 100% purity.

In the event a nitrogen or argon generator is being used to supply the system with inert gas, a dryer/filter assembly should be implemented between the generator and the StoragePod Station. In this case the out-put gas being supplied to the system it MUST be clean, oil free and at least 99.5% pure.

Some in house inert gas supplies (particularly those fed from a nitrogen generator rather than a liquid nitrogen boil-off system) are not completely dry. This is normally due to either:

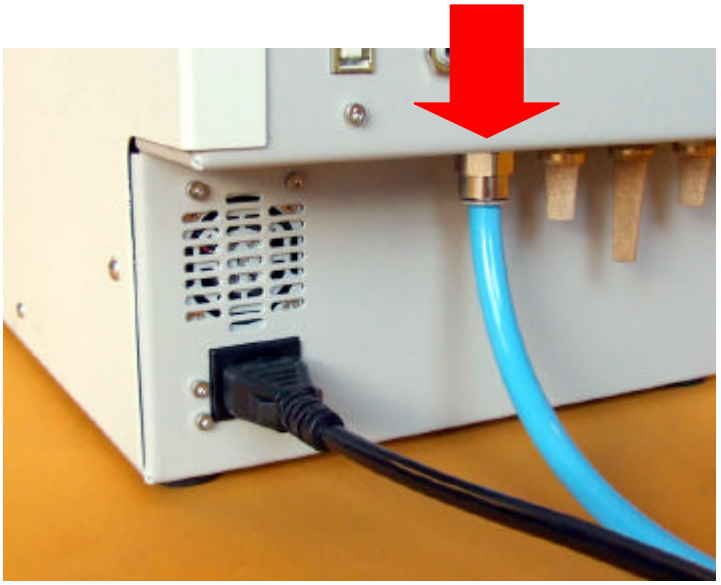
- The use of a nitrogen generator with an insufficient drying stage
- Extended lengths of in-house piping that is moisture permeable
- A long length of supply tubing has been left connected to a closed supply tap, where the residual gas within the tubing has drawn in significant moisture (NOTE – INERT GAS SHOULD BE PURGED THROUGH SUCH SUPPLY TUBING BEFORE CONNECTING IT TO THE STORAGEPOD™ STATION)

The StoragePod™ Station will alert the End User in the event that background moisture is detected. The option will be given to re-try the calibration or select the

8) Connecting the Inert Gas Supply

8.1) UK, Europe and Asia

The StoragePod™ Station is fitted with a 10mm push in connector. Please use the supplied 10mm push fit plastic tubing to plug into this connector as pictured below:



End Users based in the USA or Canada should use the supplied 10mm to ¼ inch tube converter.

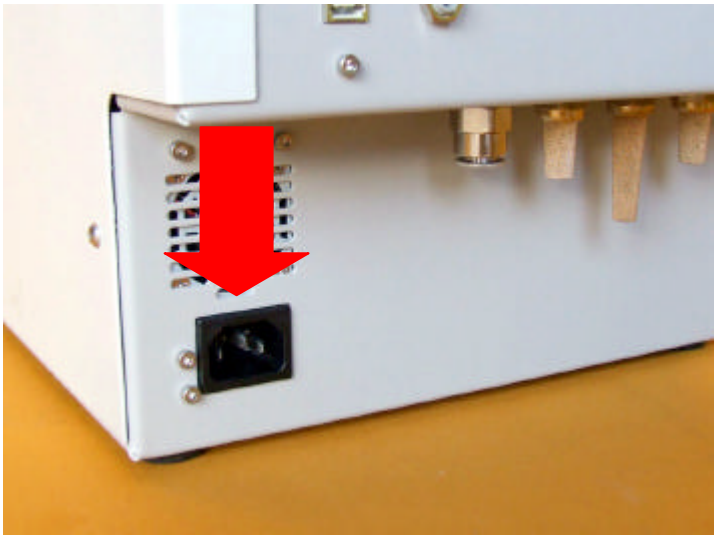
PLEASE NOTE – INERT GAS SHOULD BE VENTED FROM THE SUPPLY THROUGH THE SUPPLY TUBING FOR AT LEAST 10 SECONDS, PRIOR TO FITTING THE TUBING TO THE STORAGEPOD STATIONä . THIS IS TO PURGE ANY MOISTURE THAT HAS BEEN ABSORBED INTO THE OPEN SUPPLY HOSE.

9) Connecting the Power

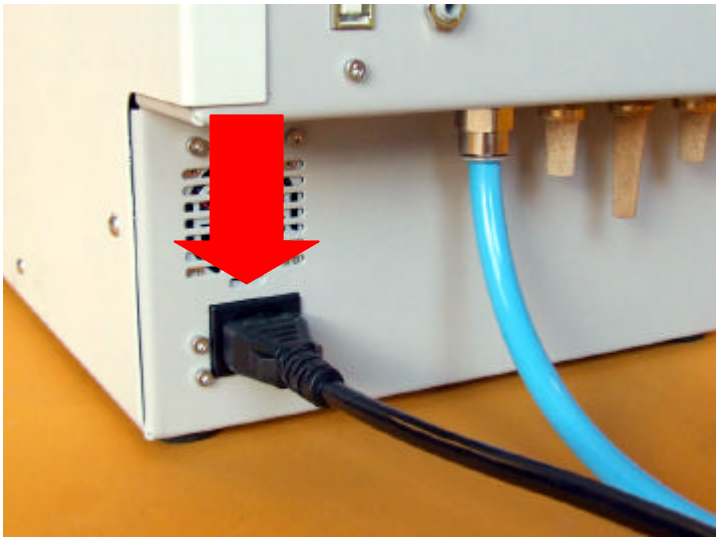
The StoragePod™ Station features a standard IEC power inlet and auto switching power supply unit.

Accordingly there are no switches to be set for different supply voltages – the unit will automatically detect and configure itself for each given supply voltage.

Please connect the supplied mains lead into the IEC power inlet at the rear of the StoragePod Station.



Now connect the plug on the mains lead into a mains power socket.



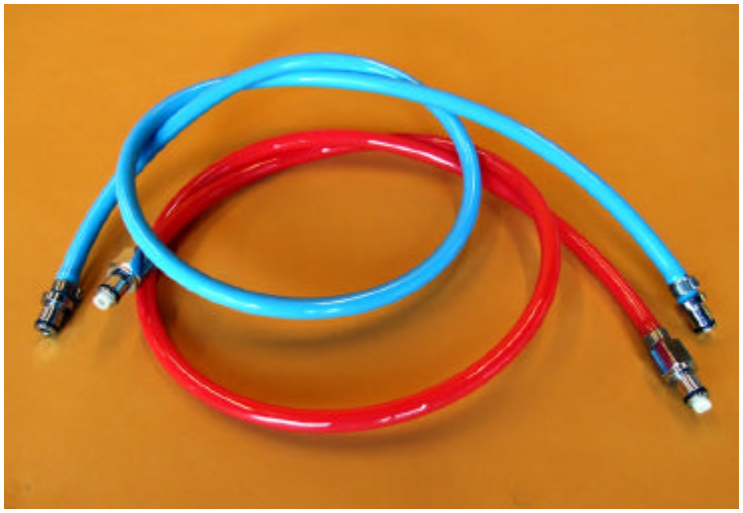
Please press the red power button on the display besel of the StoragePod™ Station, positioned at the bottom right hand corner of the liquid crystal display.

The liquid crystal display should illuminate and present a start up screen. Please press the red power button again to turn the StoragePod™ Station off.

10) Connecting the Flushing Lines

The StoragePod™ Station is supplied with a pair of flushing lines, which are used to connect StoragePod Enclosures to the StoragePod Station for the flushing process.

The lines are pictured below. Separate red and blue lines are present with identical fitting at either end. The red line features valved female fittings and the blue line features unvalved female fittings.



It is important that the lines are connected to the StoragePod™ Station in the correct orientation. The blue line should be connected to the left male fitting and the red line should be connected to the right male fitting. For clarity the text next to each fitting is colour coded.

NOTE: It does not matter which ends of the flushing lines are attached to the StoragePod™ Station as the fittings at either end of each line are the same.

11) Operating Procedures - StoragePod ä Enclosures

11.1) Lid & Latch System

StoragePod™ Enclosures are designed with lids or hinged doors that seal with a number of spring loaded latches

The latches are sprung to ensure an even clamping force around the sealing interface between the enclosure lid and main body. In particular the latches feature a locking system to prevent them from springing open if knocked accidentally.

The switch for the locking system is presented in the images below. Please take a moment to inspect an enclosure latch and try pushing the switch inwards and downwards to unlock the latch.

Place fingers under the latch lever and thumb on the latch switch

Depress the latch switch with the thumb

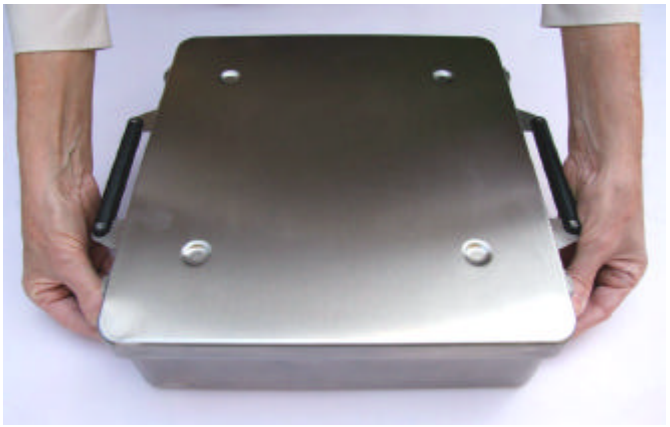
Whilst depressing the latch switch, swing the latch upwards with fingers

11.2) Releasing the Enclosure Lid/Door

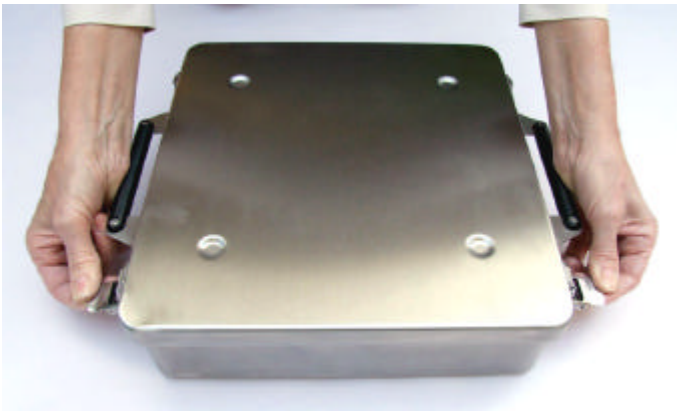
To remove the lid from a StoragePod™ Enclosure main body please perform the following procedure:

1. Position the Enclosure on a lab bench oriented; as shown in the picture below:

2. With both left and right hands, simultaneously grasp the left and right hand front latches respectively; as shown in the picture below:

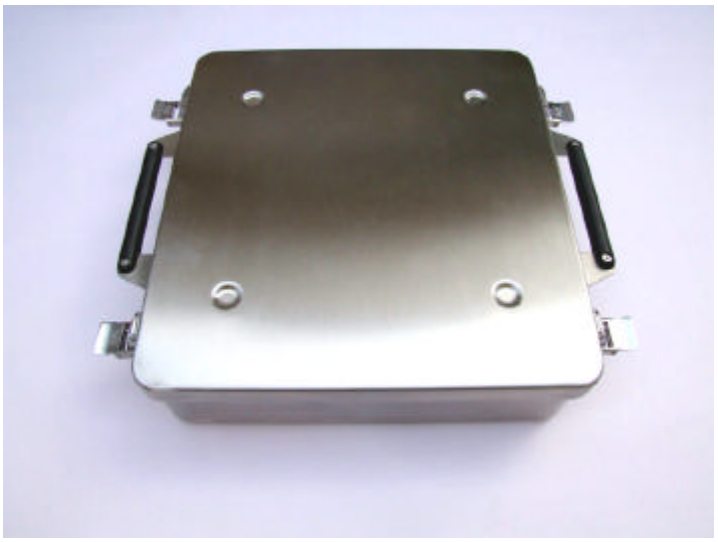


3. Depress the locking switches with your thumbs and lift the latches upwards and outwards; as shown in the pictures below:



4. Repeat procedures 2. and 3. with the second set of latches at the other end of the enclosure.

5. Ensure that the latches are free of their retaining strikes on the lid, as shown in the picture below:

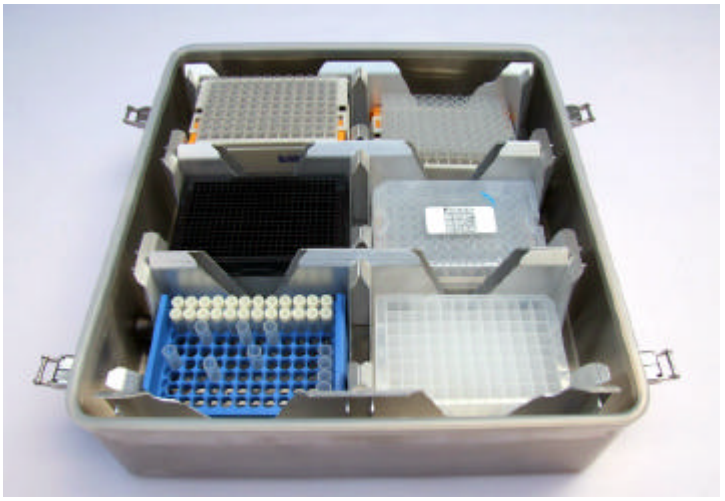


6. Lift the lid free of the enclosure main body by its handles.

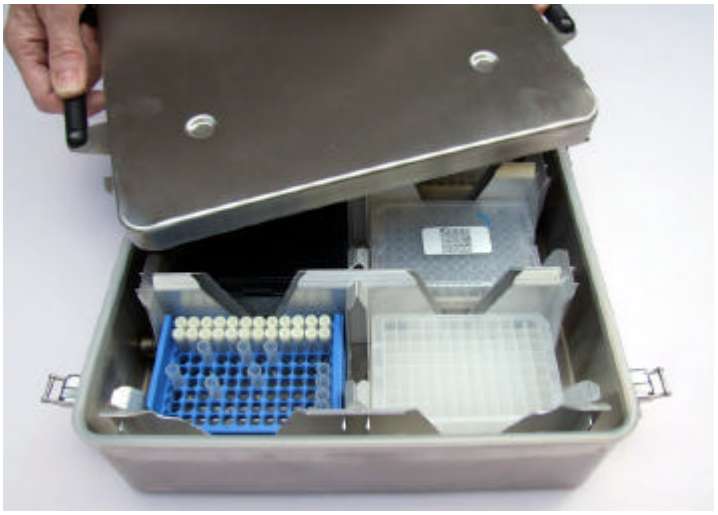
11.3) Re-Fitting the Enclosure Lid

To re-fit the lid to a StoragePod™ Enclosure main body please perform the following procedure:

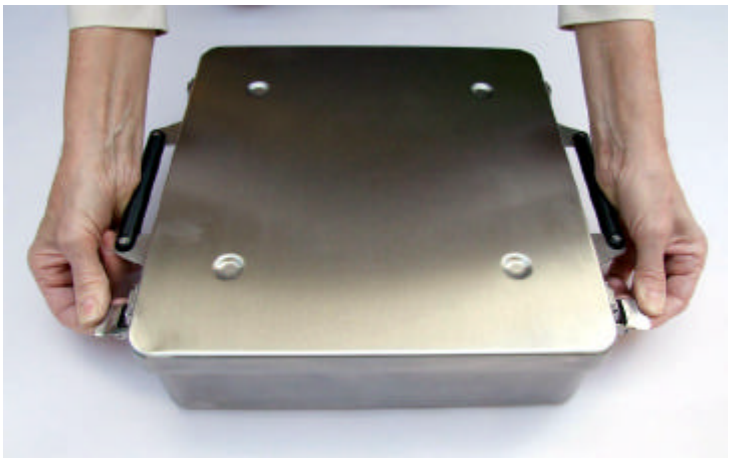
1. Position the Enclosure main body on a lab bench oriented with the latches to the sides; as shown in the picture below:



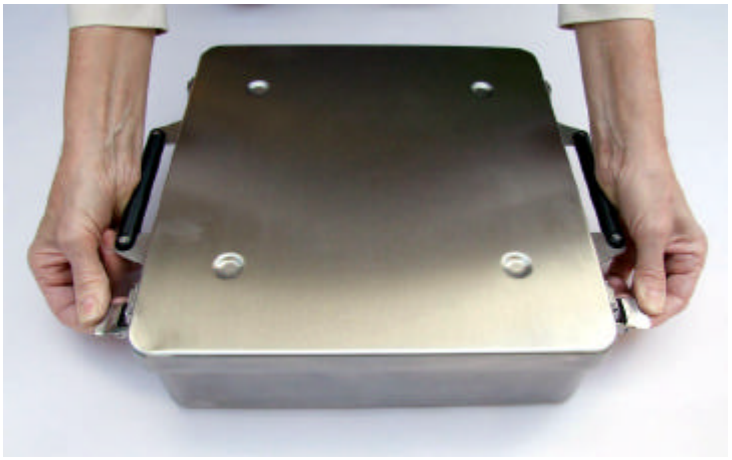
2. Pick up the enclosure lid by the handles and position it over the enclosure main body; as shown in the picture below:



3. With both left and right hands, simultaneously grasp the left and right hand front latches respectively and engage them with the corresponding retaining strikes on the lid; as shown in the picture below:



4. With both left and right hands, simultaneously grasp the left and right hand front latches respectively and push them downwards until they lock; as shown in the picture below:



5. Repeat procedures 3. and 4. with the second set of latches at the other end of the enclosure.

11.4) Quick Release Hose Fittings

Each StoragePod™ Enclosure is fitted with a pair of female quick release hose fittings. These fittings are used to allow purge gas to be flushed into and out of an enclosure. The fittings are positioned on opposite enclosure sides to provide effective and rapid gas mixing.

The StoragePod™ Station features a pair of flushing lines, at the ends of which male quick release fittings are present.

As part of the gas flushing cycle for conditioning an enclosure, the User is required to engage and subsequently disengage the male connectors on the StoragePod™ Station flushing lines, with the female connectors fitted to the enclosure main body.

11.5) Engaging the Quick Release Hose Fittings

To engage a quick release hose fitting, please perform the following procedure:

1. Firmly grasp a male quick release fitting at the end of a flushing line and align the fitting with a one of the Female fittings in the enclosure main body; as shown in the picture below:

2. Engage the fittings by pushing them together until a ‘click’ is heard.

3. In the event that the fittings will not engage, it may be that the locking mechanism on female fitting (mounted to the enclosure main body) has been inadvertently moved to the locked position. Should this be the case please depress the fitting release switch; as shown in the picture below:

11.6) Disengaging the Quick Release Hose Fittings

To disengage a quick release hose fitting, please perform the following procedure:

1. Firmly grasp a male quick release fitting at the end of a flushing line and depress the locking switch on the connected female fitting; as shown in the picture below:

2. Pull the male fitting away from the enclosure body; as shown in the picture below:

12) StoragePod Enclosure Designs

At the time of writing this manual the following StoragePod™ Enclosure designs are available:

Name **Cat. No**	**Capacities**
Purley SPOD0003	• 36 x shallow well microplates • 6 x deep well blocks • 12 x 0.75ml tube racks • 6 x 1.4ml tube racks
Dundee SPOD0004	• 54 x shallow well microplates • 12 x deep well blocks • 18 x 0.75ml tube racks • 12 x 1.4ml tube racks
Short Dundee SPOD0011	• 36 x shallow well microplates • 8 x deep well blocks • 12 x 0.75ml tube racks • 8 x 1.4ml tube racks
Ockley SPOD0005	• 54 x shallow well microplates • 12 x deep well blocks • 18 x 0.75ml tube racks • 12 x 1.4ml tube racks
Palm Springs SPOD0006	• 80 x shallow well microplates • 18 x deep well blocks • 22 x 0.75ml tube racks • 18 x 1.4ml tube racks
San Diego SPOD0007	• 240 x shallow well microplates • 54 x deep well blocks • 66 x 0.75ml tube racks • 54 x 1.4ml tube racks
San Francisco SPOD0010	• 252 x shallow well microplates (with loose lids) • 288 x shallow well microplates (with loose lids) • 72 x deep well blocks • 144 x 0.5ml tube racks • 72 x 0.75ml tube racks • 72 x 1.4ml tube racks

Please refer to the Roylan Developments StoragePod™ web-site www.spod-technology.com for further details and the latest StoragePod™ Enclosure developments.

13) StoragePod ä Station

11.1) General

The StoragePod™ Station software guides the User through all the functions required to safely flush an enclosure with nitrogen gas to defined oxygen and moisture backround levels.

The StoragePod™ Station has four main modes of operation/system states:

- Power On Self Test — Tests the inert gas supply pressure and 7.5 PSI safety blow off valve
- Calibration — Calibrates the oxygen and humidity sensors and confirms the purity of the inert purge gas
- Set-up Flush — Sets the oxygen and moisture threshold levels for a flush cycle
- Repeat Flush — Performs the inert gas flushing of an attached enclosure

The StoragePod™ Station monitors all critical hardware and set-up conditions. In the event an error is detected the system will display details of the error enabling it to be resolved.

11.2) User Interface

The user interface (pictured below) consists of:

- a red power on/off button
- four black control buttons
- a red power LED
- a tricolour red, green and orange status LED
- an LCD display

The StoragePod™ Station also features a piezoelectric buzzer to provide audible alerts to the User during operation.

A momentary press of the red power button will power the unit on. If the unit is already on, pressing and holding the red button for longer than 2 seconds will turn the unit off, regardless of its current state.

The four black control buttons are dynamically labelled on the LCD during system use.

Step by step instructions are augmented with the front panel tri-colour status LED and an internal piezoelectric buzzer that informs the user of the unit's operating conditions.

11.3) StoragePod Station System States

The tri-colour status LED has three colour states, defining the following individual system states:

System start-up:

- Green LED illuminates for approx 3 seconds while system power stabilises
- After System Power UP, Green LED illuminates for 500mS then Orange LED for 500mS and then Red LED for 500mS

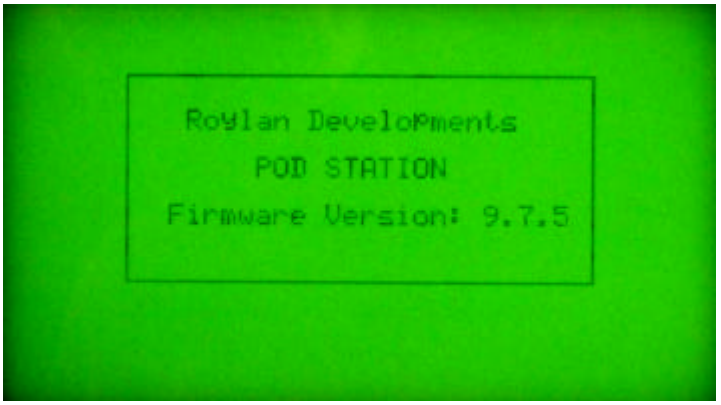
System operation:

- Green LED indicates that the StoragePod™ Station has passed an internal test or set point successfully
- Orange LED indicates that the StoragePod™ Station requires user attention, such as Increasing the inert gas supply pressure or the StoragePod Station is making internal adjustments, such as adjusting gain settings
- Red LED indicates that the StoragePod™ Station has failed an internal test or set point

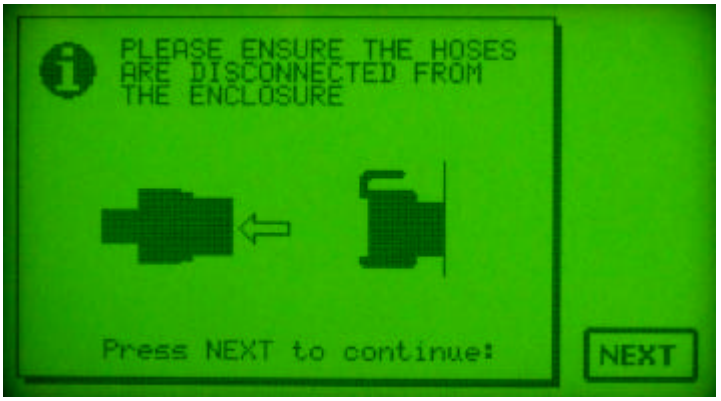
11.4) System Start-Up

During the initial seconds of power up, the StoragePod™ Station User Interface will display the Roylan Developments logo and details of the installed firmware version.

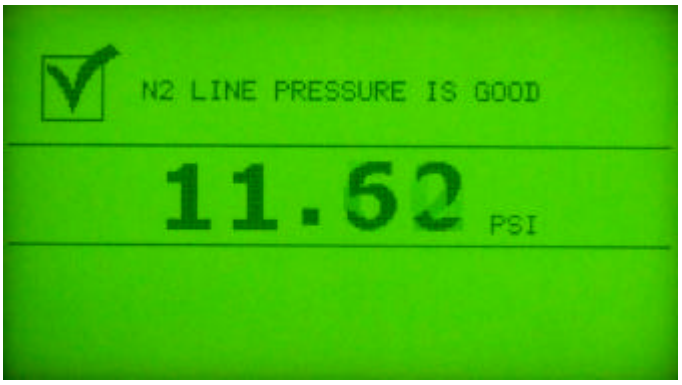
Roylan Developments is constantly updating the StoragePod™ Station firmware with improvements and new features. Please contact Roylan Developments to obtain details of the latest firmware releases.



After displaying details of the installed firmware version the StoragePod™ Station will prompt the End User to disconnect the flushing hoses from an enclosure if one is connected and then press the NEXT button. If the NEXT button is not pressed within two minutes the StoragePod™ Station will power down.



The StoragePod™ Station will then perform a rapid inert gas, static supply pressure check. If the measured pressure is within acceptable limits the user is prompted that the inert gas line pressure is good.



The StoragePod™ Station will now perform a secondary pressure (and gas flow rate) check with inert gas flowing through the system, to ensure that the minimum required inert gas supply pressure is available under load.

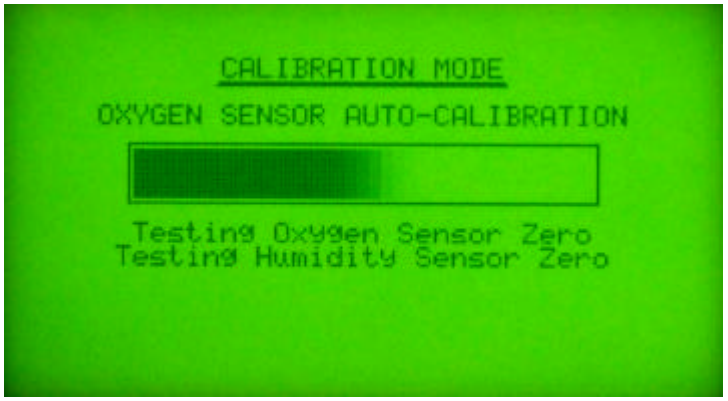
This test is conducted by passing inert gas through the StoragePod™ Station's safety blow-off valve, thus also providing a test of this valve to ensure it is functioning within it pre-defined limits.

In the event the gas supply pressure is too low the StoragePod™ station will notify the User via the user interface and with an audible warning. In this event the system should be turned off using the red power button and the supply pressure should be increased.

After checking the available inert gas supply static pressure and pressure under load the StoragePod™ Station will perform an automatic calibration procedure.

11.5) System Calibration

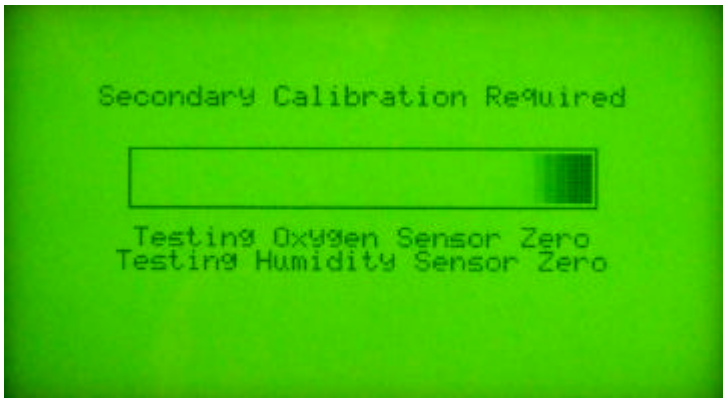
After the start-up tests the StoragePod™ Station will perform a calibration cycle for the onboard oxygen and humidity sensors. In particular the oxygen sensor requires periodic calibration, due to the chemicals within it breaking down over time.



The StoragePod™ Station will calibrate in accordance with the following schedule:

- Upon initial start-up
- Once every two weeks
- Upon start-up where mains power to the StoragePod™ Station has been disconnected and re-connected (i.e. because the StoragePod™ Station has been moved within a laboratory)
- When the End User forces a calibration cycle within the StoragePod™ Station User Interface.

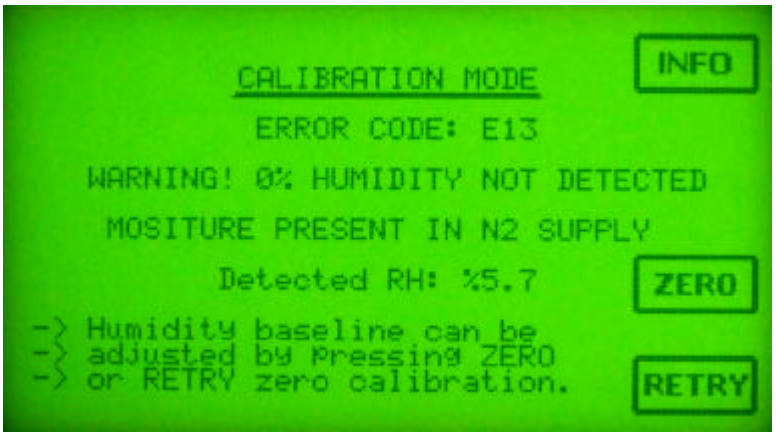
This calibration procedure may take up to 2 minutes. In the event the initial calibration cycle was not 100% successful the StoragePod™ Station will perform a secondary calibration.



Some in house inert gas supplies (particularly those fed from a nitrogen generator rather than a liquid nitrogen boil-off system) are not completely dry. This is normally due to either:

- The use of a nitrogen generator with an insufficient drying stage
- Extended lengths of in-house piping that is moisture permeable
- A long length of supply tubing has been left connected to a closed supply tap, where the residual gas within the tubing has drawn in significant moisture (NOTE – INERT GAS SHOULD BE PURGED THROUGH SUCH SUPPLY TUBING BEFORE CONNECTING IT TO THE STORAGEPOD™ STATION)

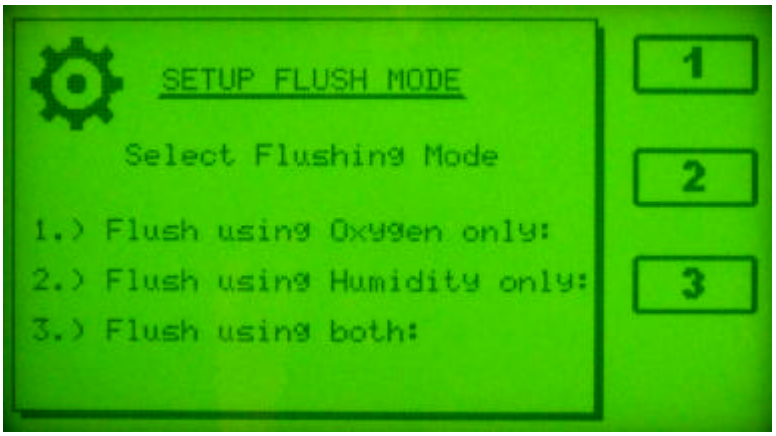
The StoragePod™ Station will alert the End User in the event that background moisture is detected within the inert as supply. The option will be given to retry the calibration or set an 'effective' zero humidity level at the detected background humidity level.



11.6) Flush Set-up and Threshold Setting

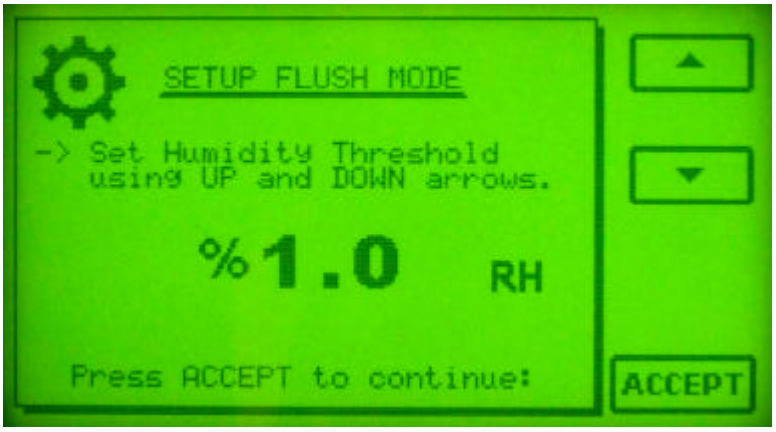
Once calibrated the StoragePod™ Station will present the SETUP FLUSH MODE menu. This menu will allow the End User to purge enclosures with the following options:

- Purge to a defined oxygen threshold
- Purge to a defined humidity threshold
- Purge to COMBINED oxygen and humidity thresholds



The instructions provided in this End User manual will now assume that option 3, to flush with both oxygen and humidity thresholds will be selected.

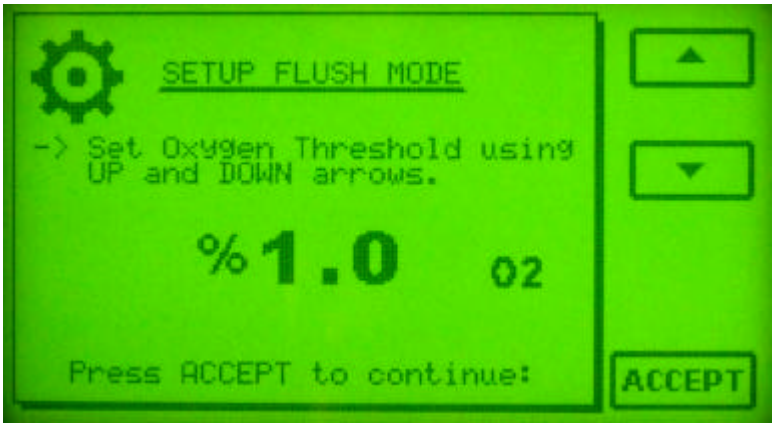
The StoragePod™ Station User Interface will now prompt the User to select a humidity threshold level at which the StoragePod™ station will terminate a flush cycle.



This threshold level represents the percentage level of humidity left remaining within the connected enclosure. The typical percentage level of humidity in free air-conditioned laboratory air is approximately 45%-50% and the factory default threshold setting is 1%, providing an approximate 50-fold reduction in moisture content.

If desired, the humidity threshold level can be increased or decreased in 0.5% increments down to 0.1%.

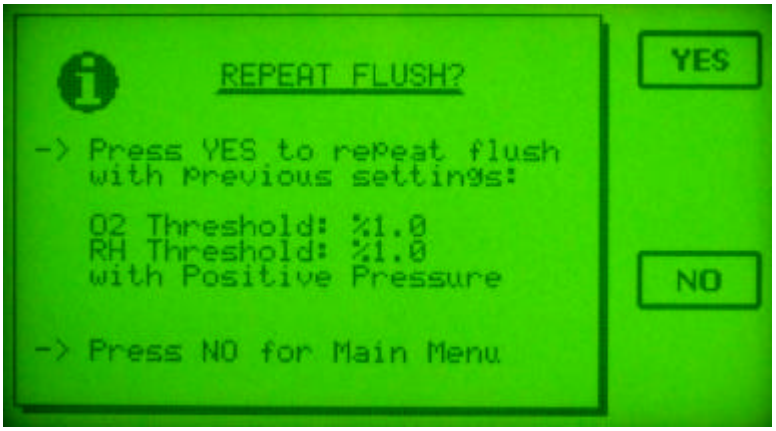
The StoragePod™ Station User Interface will now prompt the User to select an oxygen threshold level at which the StoragePod™ station will terminate a flush cycle.



This threshold level represents the percentage level of oxygen left remaining within the connected enclosure. The percentage level of oxygen in free air is approximately 21% and the factory default threshold setting is 1%, providing an approximate 20-fold reduction in oxygen content.

If desired, the oxygen threshold level can be increased or decreased in 0.5% increments down to 0.1%.

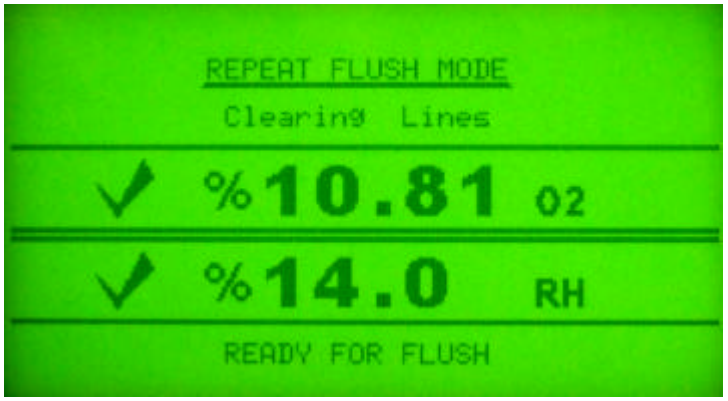
The StoragePod™ Station will save the selected humidity and oxygen threshold levels, allowing the User to implement them in successive flush cycles. A menu option is also available at the end of each flush cycle, allowing the User to return to the StoragePod™ station's main menu where the threshold setting can be changed.



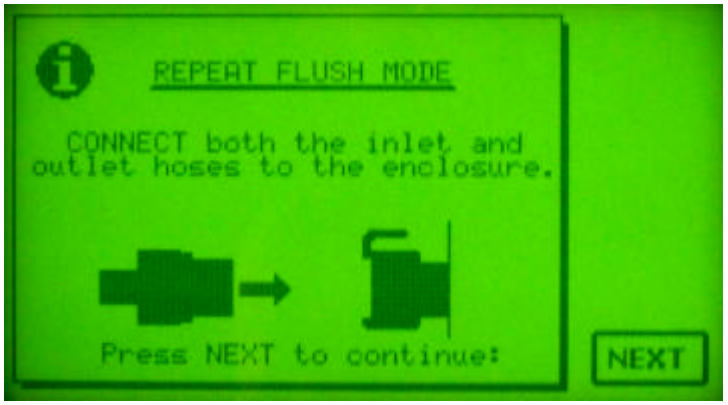
11.7) The Gas Flushing Procedure – System Operation

Once the threshold level has been set the StoragePod™ Station is ready for use.

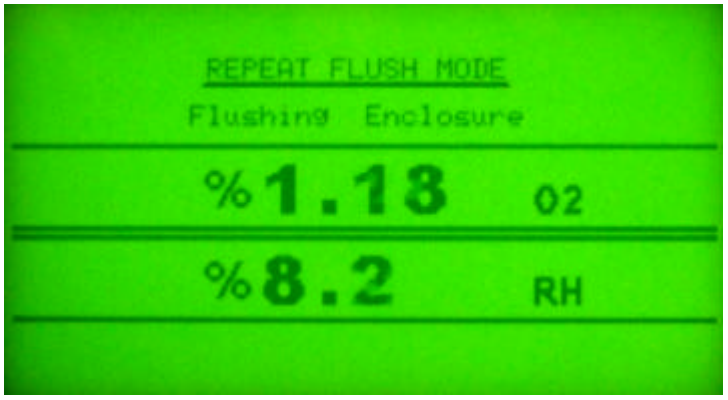
The User will be again prompted to ensure the flush hoses have been disconnected from the enclosure. The StoragePod™ Station will then clear the flush lines of any residual inert gas.



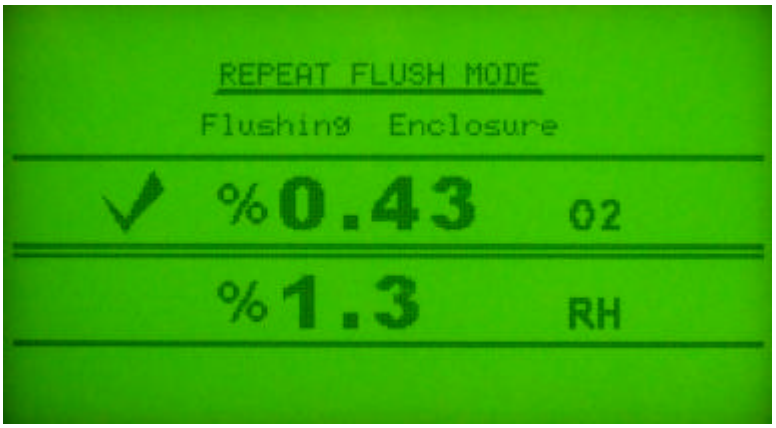
The User is now asked to connect both the inlet and outlet hoses to the Enclosure.



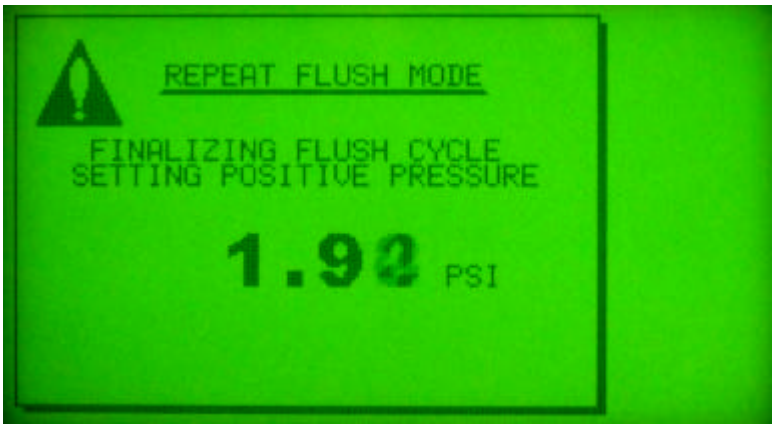
Upon depressing the NEXT button the StoragePod™ Station flushes the connected enclosure with inert gas. An on screen display can be seen detailing the progress of the flush cycle, by presenting the decreasing humidity and oxygen content within the enclosure in real time.



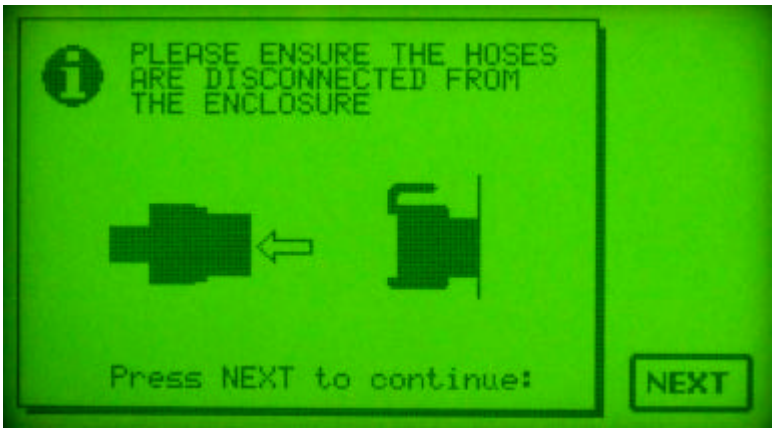
The StoragePod™ Station will continue purging until both threshold levels have been reached.



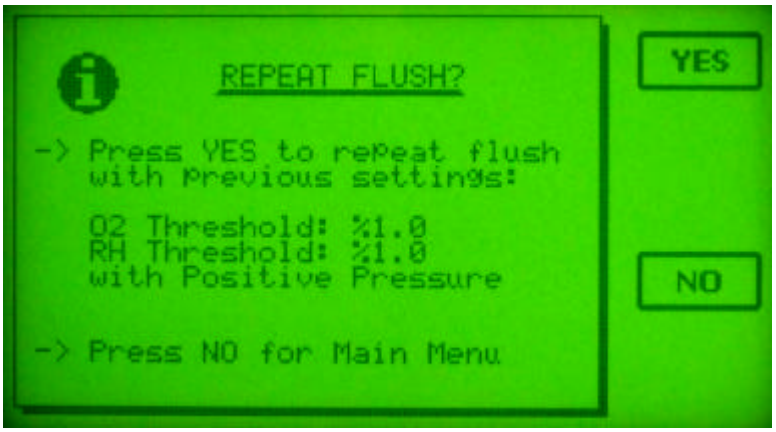
Upon reaching the threshold setting the StoragePod™ Station completes the flush cycle by setting the positive pressure level within the enclosure.



Once the positive pressure level has been set the User will be prompted to disconnect both the inlet and outlet hoses from the enclosure.



The StoragePod™ Station will now present the User with the option to perform another purge cycle with the same threshold settings, or instead access the StoragePod Station's main menu.



The main menu will allow the End User to:

1) Repeat a StoragePod™ enclosure flush cycle with the previous settings
2) Setup a new threshold value
3) Calibrate the StoragePod™ Station's oxygen sensor

14) Specification Summary - StoragePod ä Station

Dimensions	385 mm or 15.16 inches High
	260 mm or 10.24 inches Wide
	430 mm or i6.93 inches Deep
Weight	16 kg
	25 lbs
Power Supply	100-240 Volts auto switching (50 - 60Hz)
Power Consumption	50 Watts
Gas Supply Pressure	4.1 – 6 Bar
	60 – 85 PSI
Gas Consumption	60 litres per minute or higher
	2.1 cubic feet per minute or higher
Operating temperature	15-40 Degrees Centigrade
Operating Relative Humidity	5% to 85%
Case Protection	IP20
Cycle Time	Dependant upon size of connected StoragePod™ Enclosure

15) System Maintenance – StoragePod ä Station

15.1) Safety

Please disconnect the mains power lead from the StoragePod™ Station before performing any maintenance operation that requires the StoragePod™ Station case to be opened/removed.

Maintenance should only be performed by authorised and suitably trained/qualified personnel.

15.2) General Maintenance

The StoragePod™ Station has been designed to feature minimal maintenance requirements.

In particular the StoragePod™ Station features no moving parts that require periodic mechanical adjustment or that might wear out with use.

Indeed the only moving parts present in the system are a small number of solenoid driven gas valves, which are rated to tens of millions of cycles.

Maintenance is typically restricted to cleaning the exterior of the StoragePod™ Station with a damp cotton cloth, followed by the light application of some furniture polish.

15.3) Mains Lead, Gas Supply Hose and Flushing Lines

Please periodically inspect the mains lead, gas supply hose feeding inert gas to the StoragePod™ Station and the flushing lines.

Please visually inspect these items and if there are signs of wear or material fatigue, please replace them immediately. Replacement flushing lines are available from Roylan Developments as catalogue number SPOD0002.

Replacement gas-supply hose and power leads should to conform to the known applicable safety standards pertinent to the region the StoragePod™ system is installed into. It is the End Users responsibility to ensure that these standards are complied with.

15.4) Fuses

The StoragePod™ Station is fitted with the following fuses:

- 13amp fuse fitted in mains power lead
- 6.3amp fuse fitted on the StoragePod™ Station printed circuit control board used to protect the entire printed circuit control board
- 5x 1amp fuses fitted on StoragePod™ Station printed circuit control board used to protect various components
- 1x 0.2amp fuse used to protect the StoragePod™ Station gas pump

In the event of a fuse failure, only refit the correct replacement fuse.

Replacement fuses must be:

- IEC 127 approved for use in EEC Countries
- CSA or UL listed for use in Canada or the United States of America
- Conform to the specification provided below

Manufacturer	Part No.	IEC60127 Rating	Current Rating (Amps)	Designation on PCB
Littlefuse	218001	F1AL250V	1	F2, F3, F4, F5, F6
Litttefuse	216.200	F200mAL250V	0.2	F10
Schurter	0034.1524	F6.3AL250V	6.3	F1

Fitting of replacement fuses should be performed by a suitably skilled and competent Engineer.

15.5) Gas Sensor Maintenance and Replacement

The StoragePod™ Station features a gas sensor. This sensor has a nominal life expectancy of 2 years, due to the chemicals within it breaking down over time.

The StoragePod™ Station will self compensate for the sensor degradation to ensure accurate gas analysis. However a point will eventually be reached where the sensor will need to be replaced.

For convenience the StoragePod™ Station will automatically detect when the sensor requires replacement, well in advance of the sensor wearing out.

Replacement of the senor is a simple task. This may be performed:

- By returning your StoragePod™ Station to Roylan Developments in the UK

- By purchasing a replacement sensor kit – catalogue number SPOD0008. This kit includes the sensor, tools and instructions required for the sensor replacement. Sensor replacement is a simple task requiring only removal of the StoragePod™ Station cover to access the sensor. A suitably skilled and competent Engineer should perform the replacement referring to the sensor replacement manual supplied as part of the sensor replacement kit.

Please contact your local Roylan Developments Dealer or Roylan Developments in the UK to arrange for a replacement sensor kit to be dispatched to you, or to book your StoragePod™ Station in for sensor replacement at Roylan Developments in the UK.

16) System Maintenance – StoragePod ä Enclosures

StoragePod™ Enclosures are designed with minimal maintenance requirements and so only very simple and infrequent maintenance checks/activities are required.

Accordingly, to ensure that enclosures remain in a serviceable state, please periodically perform the following simple maintenance checks and activities:

- Visually check the sealing material in the enclosure lid for any damage or heavy wear
- Check that the movement of the latches is free and that the locking mechanism functions correctly
- For enclosures with a stainless steel finish, please wipe the enclosure exterior with fine machine oil or baby oil applied with a fine cotton cloth
- For enclosures with a painted finish, please clean the enclosure exterior with a damp cotton cloth, followed by the light application of some furniture or automotive polish

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